

## **REMARKS/ARGUMENTS**

### **I. SUMMARY**

Claims 73-76, 78-82, and 93-96 are pending in the application. Claims 73-76 and 78-82 are amended herein. Claims 94-96 are newly added. Applicants respectfully assert that the amendments to the claims and the new claims add no new matter. Support for the amendments and new claims may be found in the specification as follows:

Claim 73 is amended to include a conductivity range for the buffer. Support for the cited range can be found in the specification, *e.g.*, at page 6, line 10.

New claim 94 is directed toward a concentration range of the buffer. Support for the cited range can be found in the specification, *e.g.*, at page 6, line 12.

New claim 95 is directed toward the body of separating gel also having a gel buffer comprising an amine and a Zwitter ion. Support can be found *e.g.*, at page 6, lines 15-16, of the specification.

New claim 96 is directed toward the body of separating gel also having a gel buffer with a conductivity in the range of  $30 \times 10^{-5}$  (ohm<sup>-1</sup>/cm) to  $140 \times 10^{-5}$  (ohm<sup>-1</sup>/cm). Support for the cited range can be found in the specification, *e.g.*, at page 6, line 10.

In addition, claims 73-76 and 78-80 and 82 are amended herein to include a comma after the claim number from which it depends. These amendments are typographical in nature. Claims 76 and 79 are amended to recite standard Markush language.

Accordingly, no new matter has been introduced by way of these claim amendments and new claims, and claims 73-76, 78-82, and 93-96 are now pending in the application.

### **II. 35 U.S.C. §102 REJECTION**

In the Office Action mailed December 21, 2005, claims 73-76, 78-80, 82, and 93 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Cabilly *et. al.* (WO 97/41070). In view of the foregoing claim amendments explained further below, Applicants respectfully request that the Examiner withdraw the rejection.

To expedite allowance of the present application, Applicants have amended independent claim 73, from which the other claims included in this rejection depend, to incorporate a range of conductivities for the buffer in the semi-solid ion buffer reservoir. In contrast, Cabilly *et. al.* does not disclose an electrophoresis apparatus that includes buffers with such conductivities.

Cabilly *et. al.* discloses the use of a Tris-glycine buffer which has been adjusted to the desired pH by the addition of HCl. The conductivities of these buffers can be calculated using acid/base titration calculations, the Henderson-Hasselbach equation and the relationship between conductivity and the ion concentration and the ion mobility given in the following equation:  $(k = F \sum |z_i| \mu_i C_i)$ , where F is the Faraday constant,  $z_i$  is the ion charge,  $\mu_i$  is the ion mobility and  $C_i$  is the ion concentration.)

In Cabilly *et. al.*, the addition of HCl adds chloride ion to the buffer systems, which increases the conductivity. The tris-glycine buffers disclosed by Cabilly *et. al.* (Example 6) have a calculated conductivity of  $675 \times 10^{-5}$  (ohm<sup>-1</sup>/cm) for a pH 8.8. The tris-glycine buffers disclosed in Example 6 of Cabilly *et. al.* have at least a 5 times greater conductivity than the upper end of the conductivity range presently claimed by Applicants. The tris-glycine buffers disclosed in Example 5 of Cabilly *et. al.* have a pH of 6.8, which would require even more HCl to obtain the desired pH, and therefore the buffer in Example 5 will have an even greater conductivity than that in Example 6.

Therefore, Cabilly *et. al.* does not teach or suggest an electrophoresis apparatus that includes a buffer in a semi-solid ion reservoir in which the anode is located, which has a conductivity in the range of  $30 \times 10^{-5}$  (ohm<sup>-1</sup>/cm) to  $140 \times 10^{-5}$  (ohm<sup>-1</sup>/cm), and the buffer inhibits the migration of ions of the electrochemically ionizable metal into the body of separating gel during electrophoresis, as set forth in amended independent claim 73. Accordingly, for at least these reasons, Applicants respectfully request withdrawal of the anticipation rejection of claims 73-76, 78-80, 82, and 93 under 35 U.S.C. §102(b).

### III. 35 U.S.C. §103 REJECTION

Claim 81 stands rejected under 35 U.S.C. §103(a) as allegedly being obvious over Cabilly *et. al.* To establish a *prima facie* case of obviousness, the Examiner must meet three criteria. First, the Examiner must show that the references upon which she or he relied teach *every* limitation of the currently claimed invention, *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974).

Second, the Examiner must show that there is some suggestion or motivation in the references themselves, or within the knowledge of one of ordinary skill in the art, to combine the references to arrive at the claimed invention. Lastly, the Examiner must show that there is a reasonable expectation of success in combining the references, and that this expectation of success is found in the references as well. *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991). (See also MPEP 2142).

Claim 81 depends from claim 73 and thus incorporates all limitations of claim 73. As explained above, independent claim 73 has been amended herein to recite a buffer having a conductivity in the range of  $30 \times 10^{-5}$  (ohm<sup>-1</sup>/cm) to  $140 \times 10^{-5}$  (ohm<sup>-1</sup>/cm). Cabilly *et. al.* does not teach or suggest a buffer that has a conductivity in range of  $30 \times 10^{-5}$  (ohm<sup>-1</sup>/cm) to  $140 \times 10^{-5}$  (ohm<sup>-1</sup>/cm). Thus, because Cabilly *et. al.* does not teach or suggest every element of the claimed invention, claim 81 is not obvious in view of Cabilly *et al.*

Further, Applicants submit that the presently claimed conductivity range would not have occurred to a skilled artisan based on the teaching of Cabilly *et al.*, which results in much higher conductivity as explained above. There is no motivation in Cabilly *et al.* to include a buffer having the presently claimed conductivity. Accordingly, for this reason as well, Applicants assert that the cited reference does not render obvious the invention of claim 81.

Additionally, Applicants maintain their prior assertion that a surprising result is that the recited buffer inhibits the migration of ions of said electrochemically ionizable metal into said body of separating gel. However, given the recited conductivity range in the pending claims, Applicants need not submit an affidavit or declaration that the Examiner requested based on the previously pending claims. Furthermore, Applicants note that they have not responded to the Examiner's comments regarding whether the recital that the buffer inhibits the migration of ions of said electrochemically ionizable metal into said body of separating gel imposes a structural limitation, because it is not necessary to do so at this time, given the present claim amendments, which are intended to expedite allowance of the present case by obviating the rejections.

Therefore, for at least the above reasons, Applicants respectfully request withdrawal of the rejection of Claim 81 under 35 U.S.C. §103(a).

## VI. CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that all of the pending claims are in condition for allowance. Therefore, Applicants respectfully request favorable reconsideration and allowance of the present application.


If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

This response is accompanied by a Petition for Extension of Time of 3 months with fee of \$1020.00. It is not believed that any additional fees or extensions of time are necessary in connection with this paper, beyond the three month extension of time requested herewith. If extensions of time are necessary to prevent abandonment of this application, then extensions of time are hereby petitioned for under 37 C.F.R. §1.136(a), and any fees required, including fees for net addition of claims, are hereby authorized to be charged to account number 50-3120.

Respectfully submitted,

Date: June 21, 2006

Castellano Malm Ferrario & Buck PLLC  
Customer Number: **57904**  
Telephone: (202) 478-5300  
Facsimile: (202) 318-1288

By   
Kristina M. Castellano  
Registration No. 41,092